FE197

Diagram No. 5530-5

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

(HYDROGRAPHIC)

Type of Survey Tag & Circle Line Survey

Field No.

Office No. FE-197

LOCALITY

State California

General Locality San Francisco

Locality North & South Piers of Golden Gate Bridge

19

CHIEF OF PARTY
F. Paulsen & P. Larsen

LIBRARY & ARCHIVES

DATE

☆ U.S. GOV. PRINTING OFFICE: 1976—669-441

NOTE: A new system for registering Field Examinations (FE's) was established in 1980. All FE's are now consecutively numbered as shown hereon. The date shown in the new format is the actual date of survey. This material was previously registered as;

FE No.4 1964

FE197

F E No. 4
1964

F.E.No.4 1964

Diag. Chn. No. 5530-5.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Tag & Circle Line Survey

Field No. ..... *Office No.* F.E.No.4 (1964)

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CHIEF OF PARTY

F. Paulsen and P. Larsen

LIBRARY & ARCHIVES

DATE .....

B-1870-1 (1)

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. F.E.No.4-1964

Field No. .....

State California

General locality San Francisco

Locality North and South Piers of Golden Gate Bridge

Scale 1"=25' Date of survey Sept. & Oct. 1964

Instructions dated .....

Vessel Pioneer

Chief of party F. Paulsen and P. Larsen

Surveyed by .....

Soundings taken by fathometer, graphic recorder, hand lead, wire .....

Fathograms scaled by .....

Fathograms checked by .....

Protracted by .....

Soundings penciled by .....

Soundings in fathoms feet at MLW MLLW .....

REMARKS: .....

U. S. GOVERNMENT PRINTING OFFICE 777032

Lightfoot - trim and put OR in cover FE 4(1964)
- put survey plots in envelope

DESCRIPTIVE REPORT

Special Survey - Vicinity of piers of Golden Gate Bridge, 12 October 1964

A. Instructions
The work covered by this report was done in accordance with oral instructions from the San Francisco Regional Officer.

B. Purpose and Scope
The purpose of thesurvey was to take soundings at easily relocated positions to check erosion in the vicinity of the piers of the Golden Gate Bridge.

C. Dates
The work included six days of boat work totalling about fourteen boat hours working at slack water and two days of reconnaissance and locating control. The work was accomplished in late September and early October of 1964.

D. Smooth Sheets
Scale: 1 inch equals 25 feet
No Projection
Plotting was done by Ensign Fred Paulsen and verified by LTJG Paul Larsen

E. Adequacy
1. North Pier Tag Line Survey - This survey along with the two previous surveys and future surveys is adequate for detection of major erosion changes.
2. The South Pier Circle line survey which was the first of its kind, should be adequate when compared with previous surveys and similar future surveys, for detectinn of major erosion changes.

F. Accuracy (by estimation)
South Pier Circle line method (positioning)
Along the length of the ~~tag~~ line..... 0 to -1 feet
Perpendicular to the circle line..... + or - 1.5 feet
South Pier Circle line method (depths) + or - 1 foot (fathometer)
North Pier Tag line method (positinning)
Positions + or - 1 foot
North Pier Tag line method (depths) + or - 0.5 feet (lead line)

G. Miscellaneous
Commendation should be given to bridge authority employees who worked closely with the boat crew.

Records and original plot given to Golden Gate Bridge and Highway District.
No verification made of plot.
RHC

H. Methods, Equipment, and Personnel

PLATE # 1
FOG AND TRAFFIC IN SURVEY VICINITY

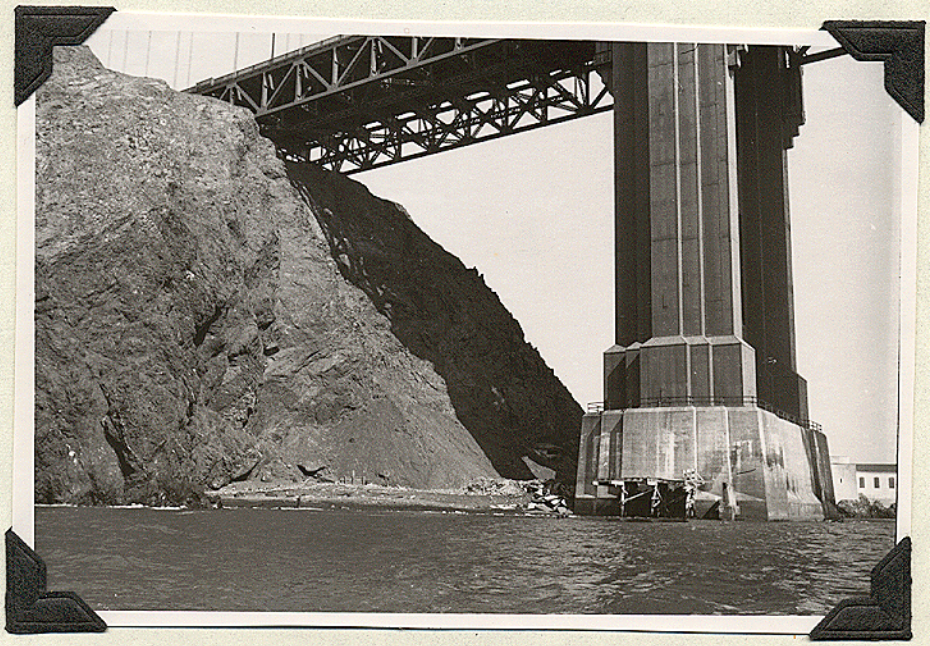


PLATE # 2
VICINITY OF NORTH PIER

NORTH PIER (MARIN PIER)

Work on the North pier was accomplished using tag lines for control. One $\frac{1}{4}$" stainless steel cable was used. It was 275 feet long and marked with a tag every 25 feet. The bridge authority supplied the cable, the same one used in previous surveys. A lead line marked in feet was used to measure the depth. The boat was a heavy duty 16 foot rowboat powered by a 10 HP Johnson engine with gear shift. Three men on the pier and three men in the boat were necessary. One man was required ashore to read the tide staff at Fort Point Coast Guard Station. A reading of 2.0 feet on the tide staff was used as MLLW. All shore personnel were supplied by the bridge authority.

The three people in the boat were:

1. Coxain - recorder - officer in charge
2. Lead line Handler
3. Tag line Handler

For soundings off of the face of the North Pier the tag line was handled as described by the following illustrations and description.

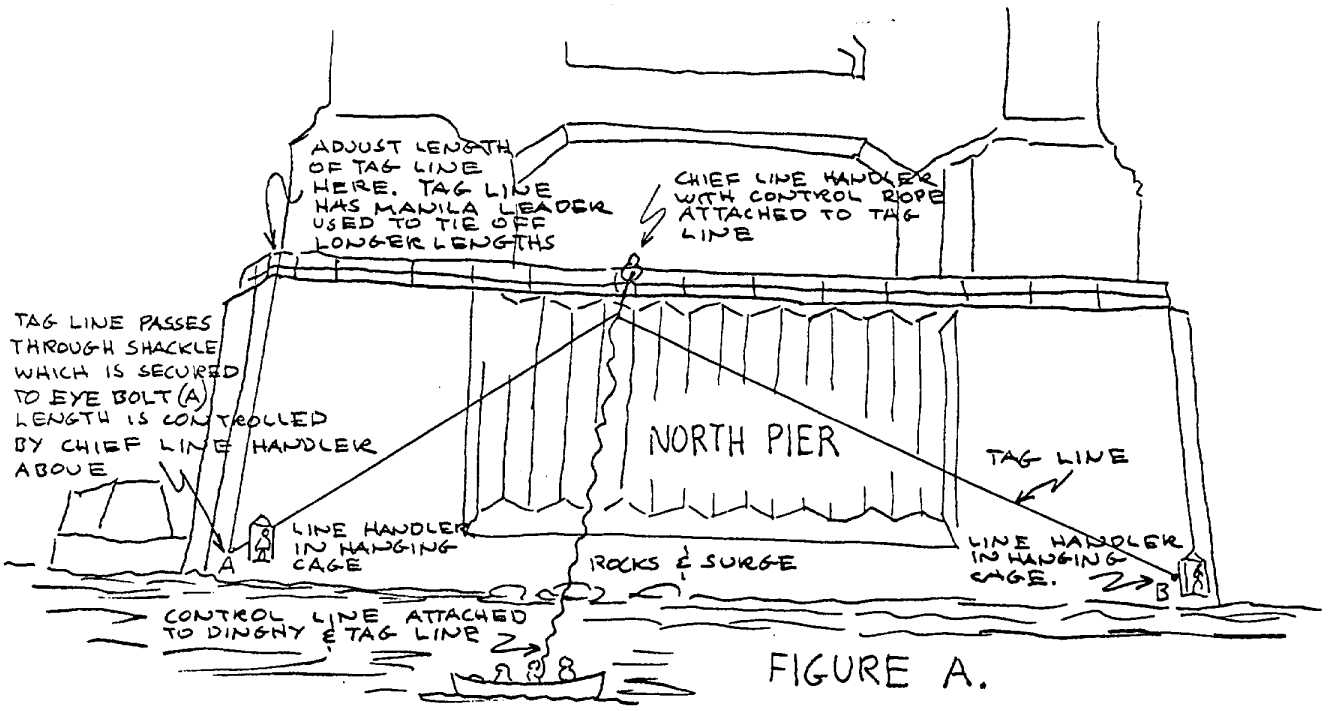


FIGURE A.

1. The tag line is put into position by the shore personnel. (Figure A)
2. The chief line handler throws monkey fist to dinghy which then strongly backs down and away putting tension on the control line and the tag line is eased over the rocks and foul area by the chief line handler.
3. The length of the tag line was controlled by the chief line handler by adjusting the portion of the tag line that runs up to the rail as shown.
4. The two line handlers in the cages were necessary for securing the lines initially. The handlers at A and B took up slack in the wire if the boat wasn't able to maintain tension. The handler at A opened and closed the shackle to allow th tags past when adjusting the length of the line.
5. A walkie talkie in the boat and up on the pier with the chief line handler proved useful.

6. It was found that optimum procedure was to back the boat down at almost full speed on the ten HP motor - all of the time - and let the position of the boat be altered by manually pulling along the tag line and changing the heading of the outboard motor. See Figure B.

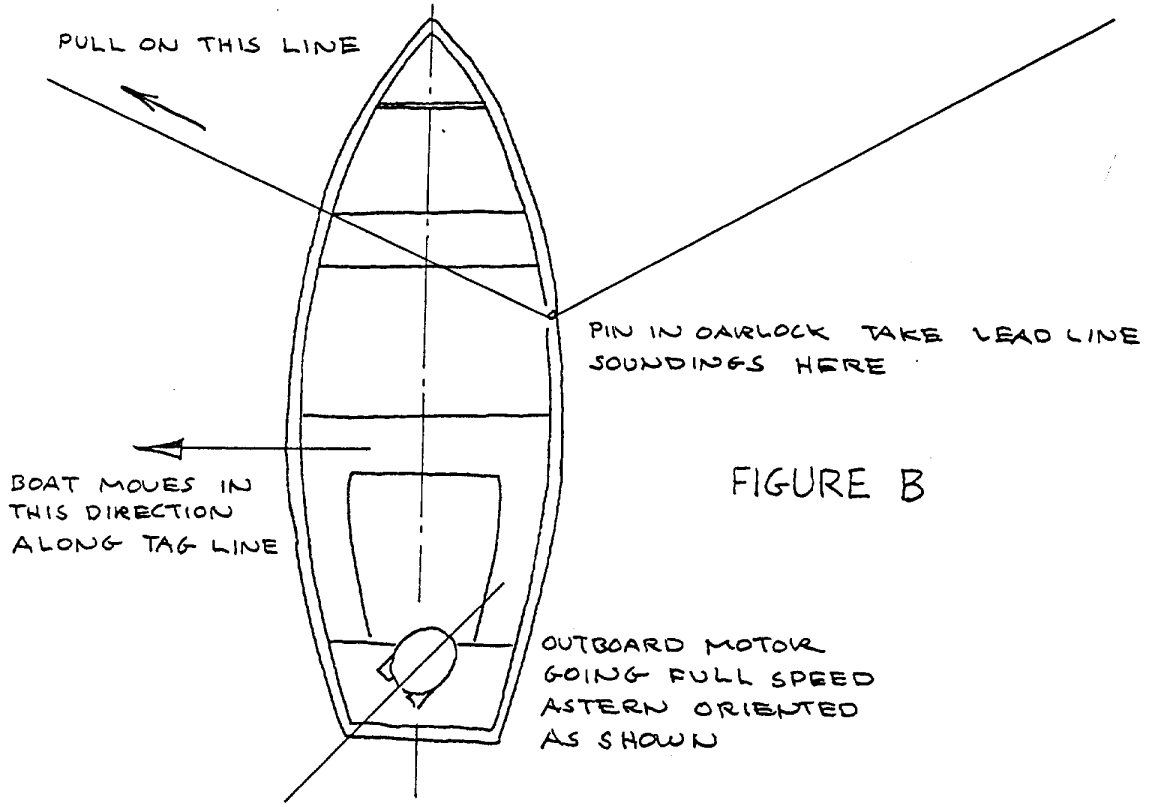
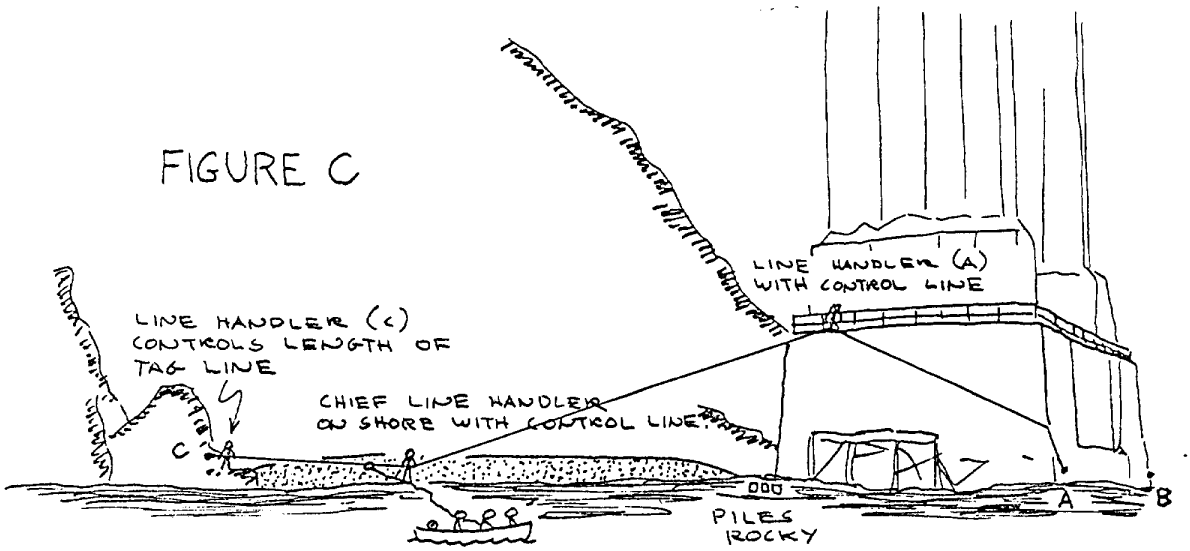


FIGURE B

For the soundings South West of the North Pier the tag line was handled as follows: See Figure C.

1. The line handlers got the line into position as shown.
2. Both the chief line handler and the line handler at A had control lines.

FIGURE C



CONTROL LINE ATTACHED TO TAG LINE WITH LARGE, SLIDING SHACKLE IS PASSED TO BOAT AT C. THE BOAT, THE CHIEF LINE HANDLER (A) WORK TOGETHER TO MANEUVER TAG LINE OVER OBSTRUCTIONS TO WORKING POSITION.

3. The boat maneuvered close to the rocks at point C and received a control line attached to the tag line with a large shackle. Then the boat backed down using full power and co-ordinating the control lines with the pull of the outboard, the line was eased over the obstructions and out into clear water to begin the survey.

4. Weather and current conditions:

   a. winds generally pick up in the afternoon.

   b. Ebb current seems to have little effect in the vicinity of the North Pier. Flood current is quite strong.

5. Recommendations

   a. It is recommended that all control lines attached to the tag line be secured with shackles that will slide easily along the tag line and not foul on the tags clamped to the wire.

   b. Supply the tag line handler in the boat with gloves.

SOUTH PIER

Six eye bolts were set in the face of the fender enclosing the south pier by bridge authority employees as prescribed by the officer in charge. On the top of the fender, holes were drilled to mark the location of the eye bolts. It was found that due to the strong currents and seeming lack of slack water in the vicinity of the South Pier the tag line method would not work. Therefore the circle line method was adopted using only one tag line and a sextant angle to define position. Because of the depth and current it was decided to use a fathometer instead of a leadline. The system proved quite workable and a description follows.

The survey positions were pre - planned as shown on figure (E) and the sextant man preset his angles and gave a visual hand signal "mark" to the recorder in the boat as it swung in a circular arc as shown in figure (D).

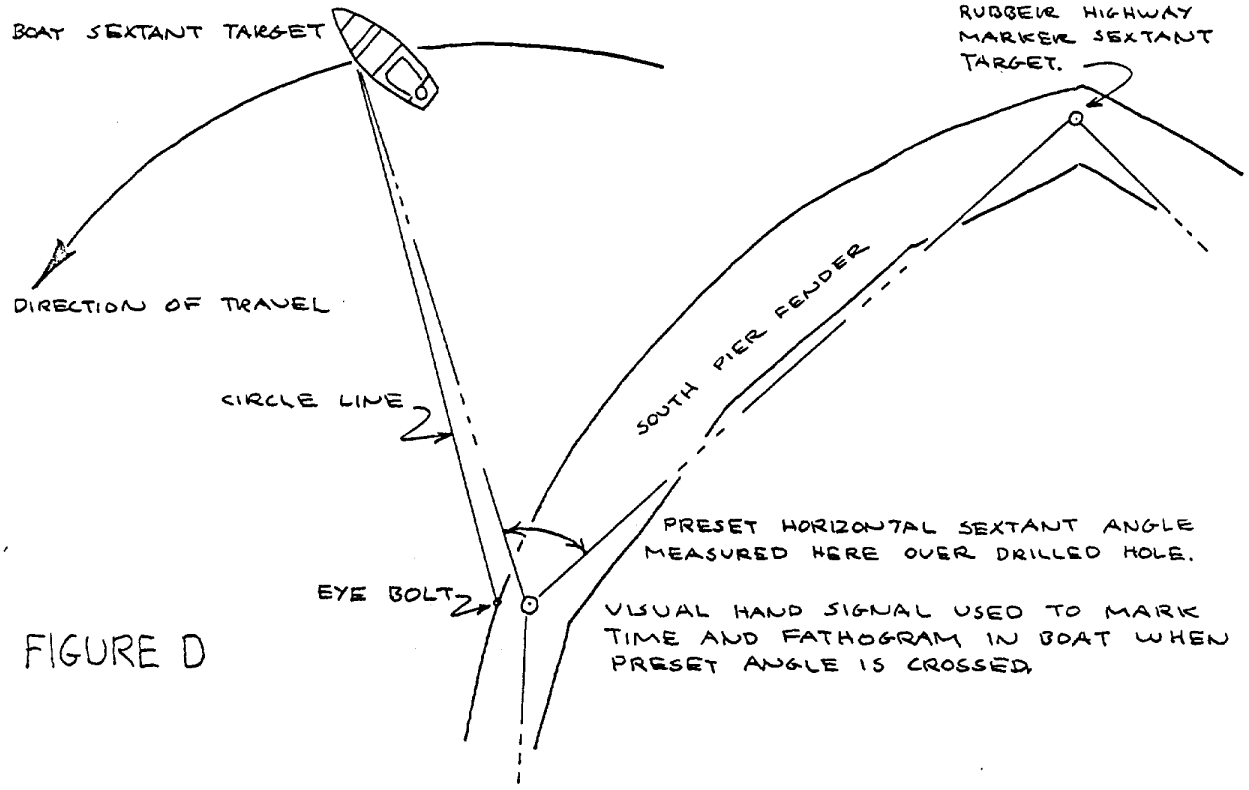
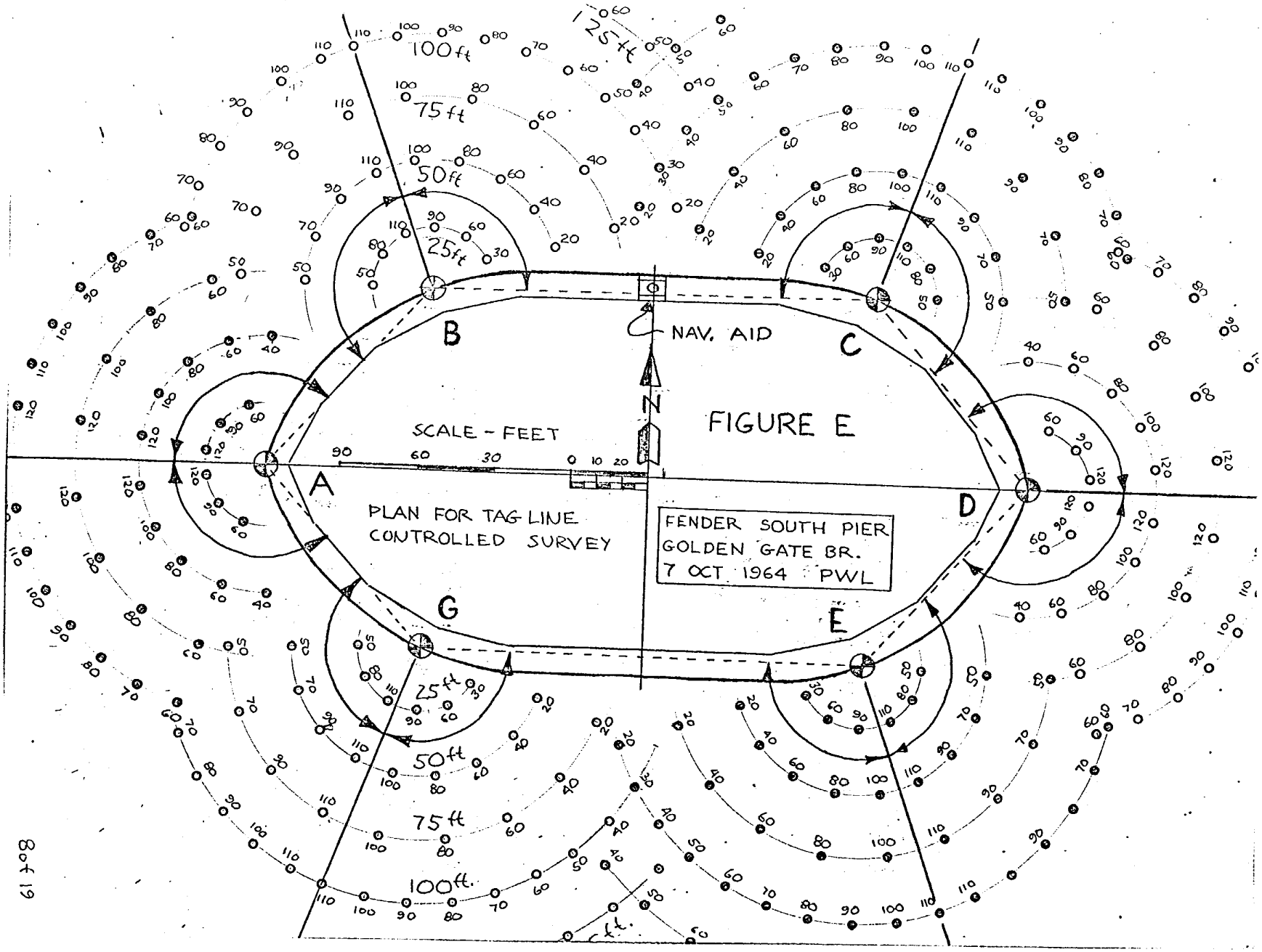


FIGURE D


100ft
75ft
50ft
25ft
B
C
A
D
G
E
NAV. AID
N
SCALE - FEET
90 60 30 0 10 20
FIGURE E
PLAN FOR TAG LINE
CONTROLLED SURVEY
FENDER SOUTH PIER
GOLDEN GATE BR.
7 OCT 1964 PWL

Figures F, G, H, & I describe the rigging of the boat.

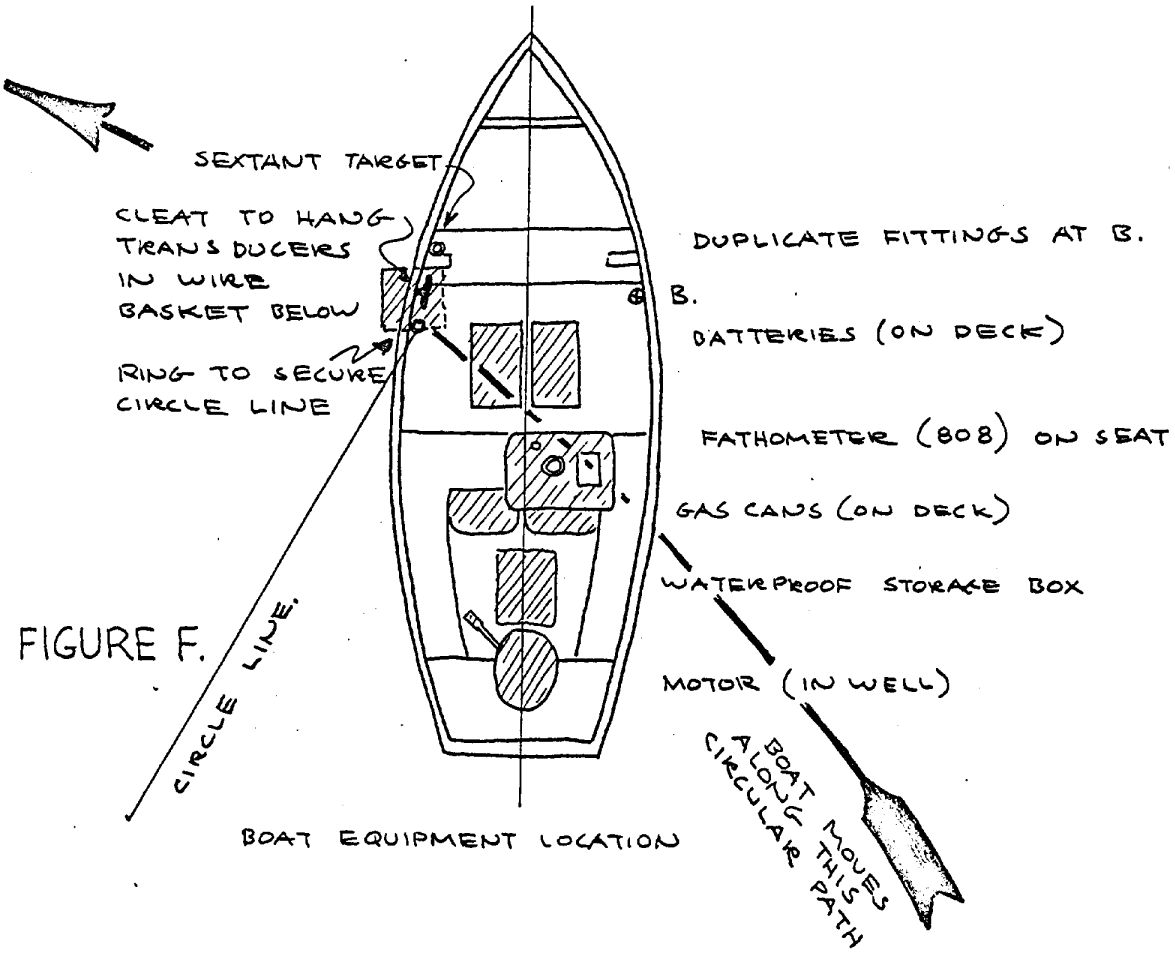


FIGURE F.

Figure F. Duplicate fittings were necessary at A and B so that the boat could operate in either a clockwise or counterclockwise mode depending on the currents. See Plates #3 and #4.

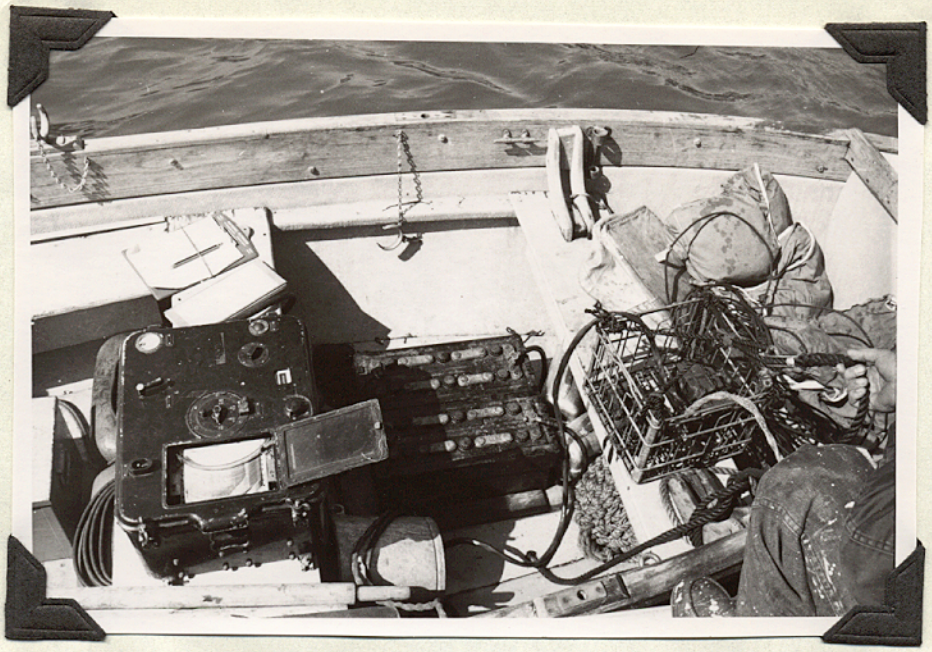


PLATE # 3

PLATE # 4

Plates three and four show the wire basket in which the transducers were tied and the general orientation of equipment in the boat.

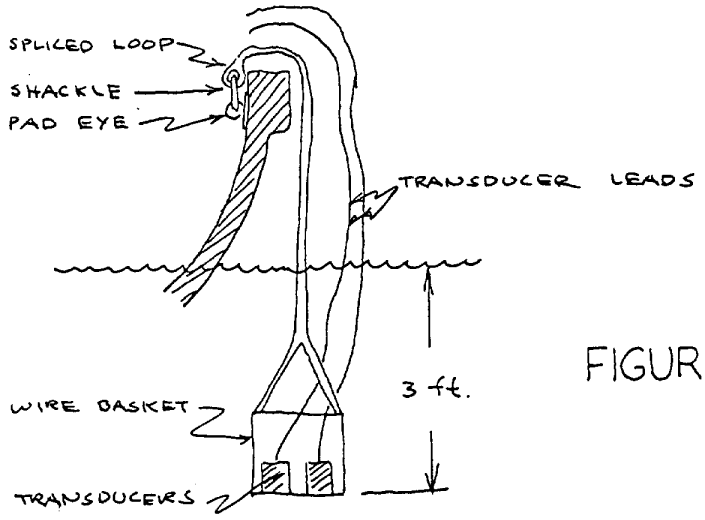


FIGURE G

Figure G. Mounting the transducers in an open wire basket kept them hanging more or less vertically while the boat rocked. No problems with side echos were experienced. The open wire basket gave little lateral resistance and the current had little effect upon the orientation of the transducers. Due to the proximity of the transducers it was impossible to eliminate the initial, limiting this method to water at least 12 to 15 feet deep.

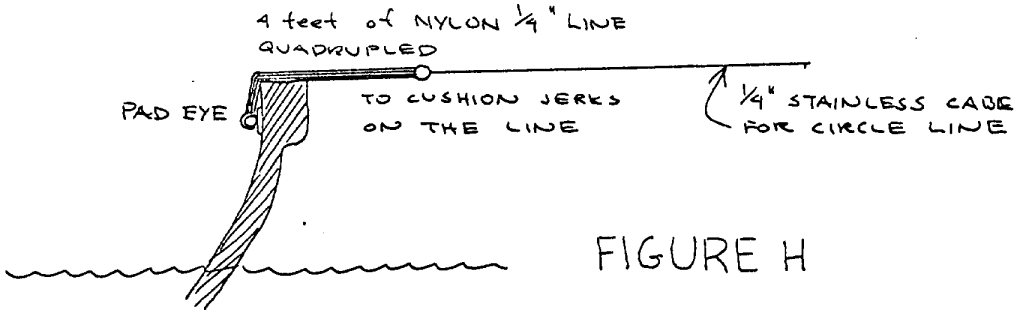


FIGURE H

Figure H. Using four feet of nylon the length of the cable, which is marked in 25 foot lengths, must be correspondingly adjusted.

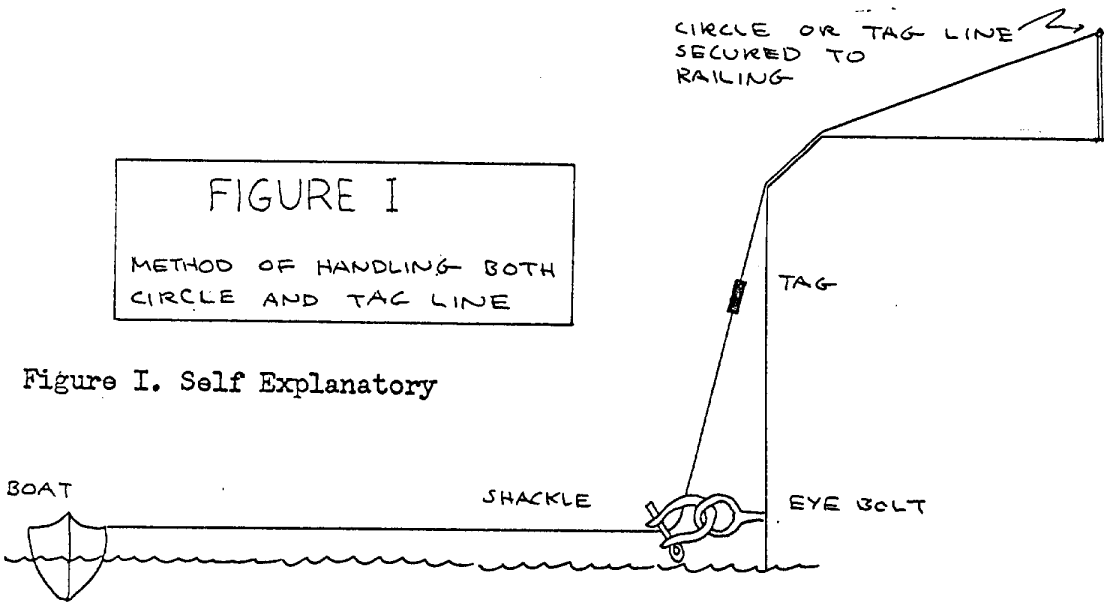


FIGURE I

METHOD OF HANDLING BOTH CIRCLE AND TAG LINE

Figure I. Self Explanatory

Personnel in the boat:

1. Coxwain - Officer in charge
2. Recorder - time keeper
3. Line Handler - Asst. recorder who marked and notated fathogram.

The sounding volume was set up ahead of time using the planning sheet and each arc numbered from 1. Since as many as six positions were taken a minute an abbreviated identification system was used. Each arc was identified on the fathogram by a letter indicating the eye bolt used and the length of the tag line. (example C75) Each successive sounding was numbered using the first position of the arc as number one.

Personnel on the pier:

1. Chief line handler
2. Asst. Line handler
3. Sextant man

Again, one man was required to read the tide staff at Fort Point Coast Guard Station.

A special ladder was used by Bridge personnel to handle the tag line.

See Plate # 5.

PLATE # 5

See figure J for a description of eye bolts and target hole location.

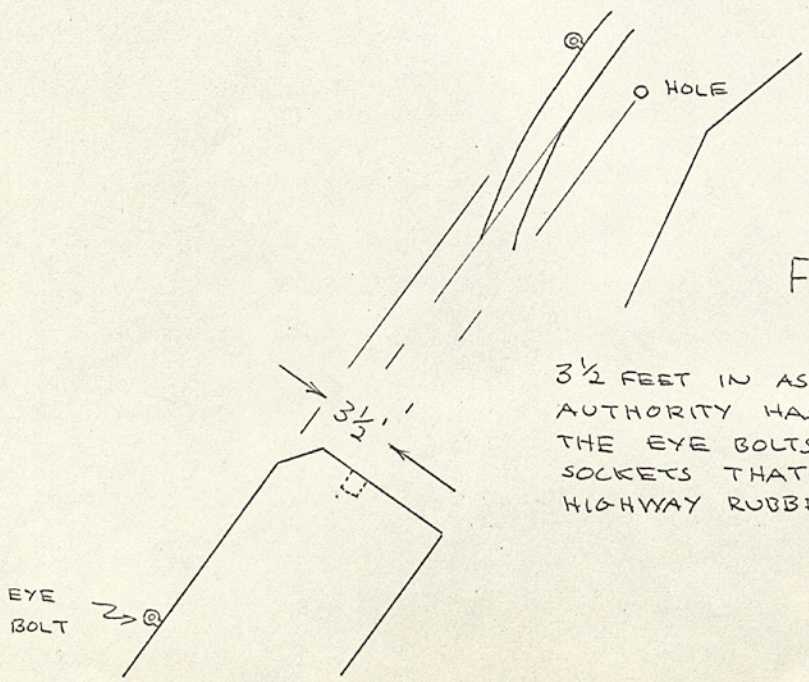


FIGURE J

3½ FEET IN AS SHOWN THE BRIDGE AUTHORITY HAS DRILLED HOLES ABOVE THE EYE BOLTS AND INSERTED METAL SOCKETS THAT HOLD THE STANDARD HIGHWAY RUBBER LANE MARKER

The target holes were located with a closed loop travers used in plotting.

Soundings were taken with a lead line along the face of the pier opposite all interior angles and in the center of the pier as shown on smooth sheet.

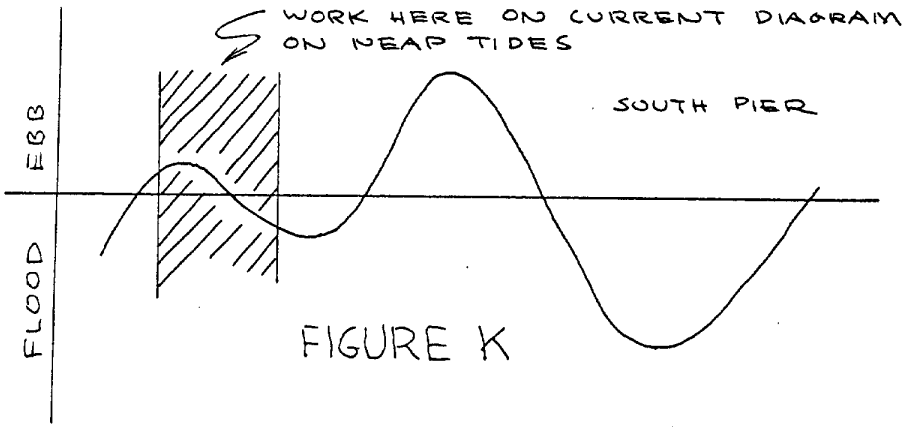


FIGURE K

Weather and current conditions:

It was found in the course of operations that the only satisfactory time to work in the vicinity of the South Pier was as shown on figure K.

Respectfully Submitted

Paul W Larsen

Paul W. Larsen
LTJG USC&GS
Hydrographer

Approved:

APPENDIX

NORTH PIER: The positions taken in the vicinity of the North pier are explained on the chart. (tag line method)

SOUTH PIER: Depths are shown as heavy numbers and position numbers are shown in parenthesis. The exact location is indicated by a small dot between the two numbers. Description of the positions follows using codes.

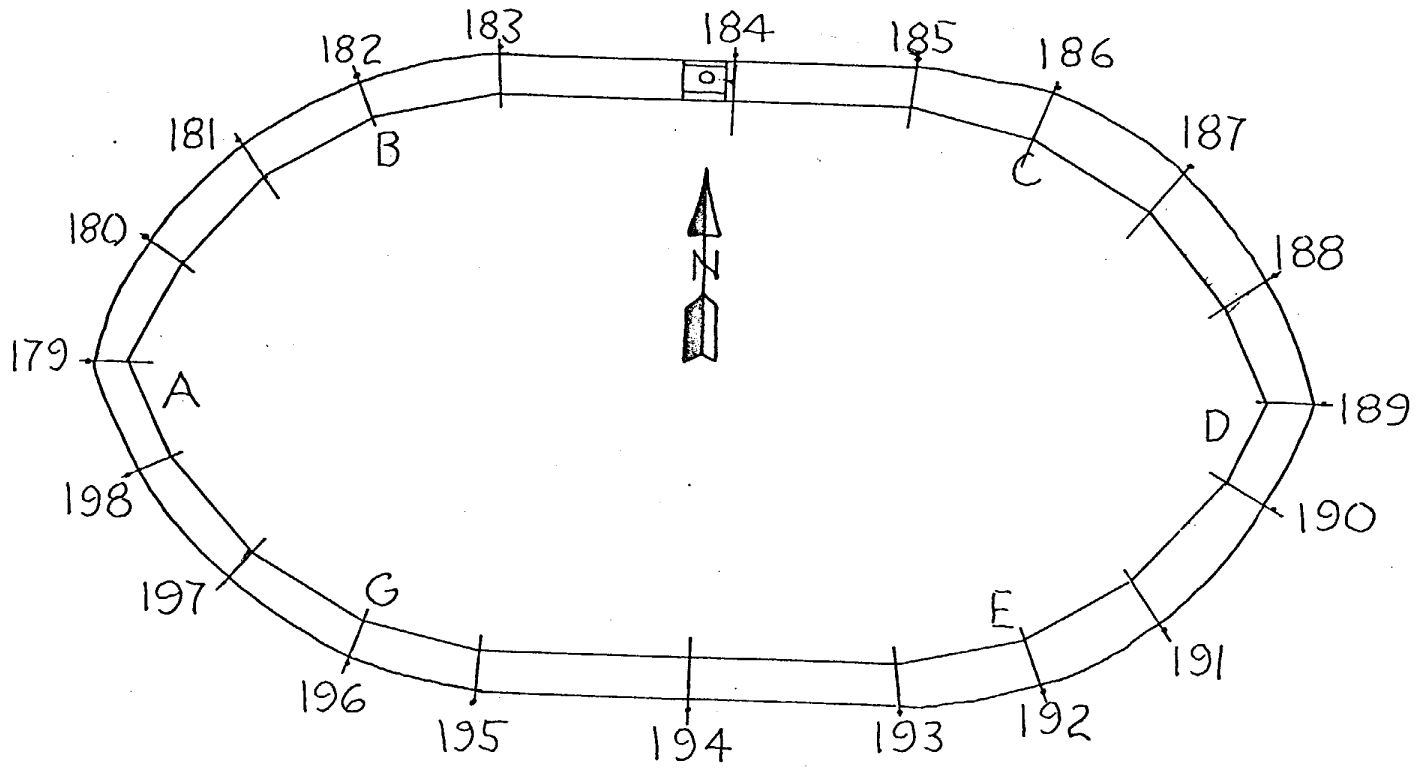
1. The first two digits give the length of the circle line.
2. The first letter (in parenthesis) indicates the station occupied by the sextant man.
3. The second letter shows from which point on the pier the sextant man was measuring the angle to the target on the boat.
4. The last digits give the angle read by the sextant man in degrees.

Position Number	Location
1.	50(C)D50
2.	70
3.	90
4.	110
5.	50(C)B100
6.	80
7.	60
8.	40
9.	20
10.	75(C)D50
11.	70
12.	90
13.	110
14.	75(C)B100
15.	80
16.	60
17.	40
18.	20
19.	100(C)D60
20.	70
21.	80
22.	90
23.	100
24.	110
25.	100(C)B110
26.	100
27.	90
28.	80
29.	70
30.	60
31.	50
32.	40
33.	30
34.	50(D)C40
35.	60
36.	80
37.	100
38.	120
39.	50(D)E40
40.	60
41.	80
42.	100
43.	120

Position Number	Location
44.	75(D)E60
45.	80
46.	100
47.	120
48.	75(D)C120
49.	100
50.	80
51.	60
52.	100(D)E60
53.	70
54.	80
55.	90
56.	100
57.	110
58.	120
59.	100(D)C120
60.	110
61.	100
62.	90
63.	80
64.	70
65.	60
66.	50(B)C40
67.	60
68.	80
69.	100
70.	50(B)A110
71.	90
72.	70
73.	50
74.	75(B)C20
75.	75(B)C40
76.	60
77.	80
78.	100
79.	75(B)A110
80.	90
81.	70
82.	50
199.	100(B)C50
200.	60
201.	70
202.	80
203.	90
204.	100(B)A110
205.	100
206.	90
207.	80

Position Number	Location
83.	50(A)G120·
84.	100·
85.	80·
86.	60·
87.	40·
88.	50(A)B40·
89.	60·
90.	80·
91.	100·
92.	120·
98.	75(A)B60·
99.	80·
100.	100·
101.	120·
102.	75(A)G120·
103.	100·
104.	80·
105.	60·
106.	100(A)B50·
107.	60·
108.	70·
109.	80.
110.	90.
111.	100·
112.	110·
113.	120·
114.	100(A)G120·
115.	110·
116.	100·
117.	90·
118.	80·
119.	70·
120.	60·
121.	50·
122.	50(G)A50·
123.	70·
124.	90·
125.	110·
126.	50(G)E100 Sounding Missed
127.	80·
128.	60·
129.	40·

Position Number	Location
130.	75(G)A50·
131.	70.
132.	90·
133.	110 } Soundings
134.	75(G)E100 } Missed
135.	80·
136.	60·
137.	40.
138.	20·
139.	100(G)A90·
140.	100·
141.	110·
142.	100(G)E110·
143.	100·
144.	90·
145.	80·
146.	70·
147.	60·
148.	50·
149.	40·
150.	30·
151.	20·
152.	50(E)G40·
153.	60·
154.	80·
155.	100·
156.	50(E)D110·
157.	90·
158.	70·
159.	50·
160.	75(E)G40·
161.	60·
162.	80·
163.	100·
164.	75(E)D110·
165.	90·
166.	70·
167.	50·
168.	100(E)G70·
169.	80·
170.	90·
171.	100·
172.	110·
173.	100(E)D110·
174.	100·
175.	90·
176.	80·
177.	70·
178.	60·

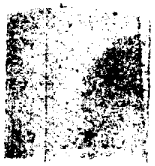


POSITION NUMBERS 179 to 198 SHOW THE LOCATION OF LEAD LINE SOUNDINGS TAKEN ALONG THE FACE OF THE FENDER AT THE SOUTH PIER OF THE GOLDEN GATE BRIDGE. SOUNDINGS WERE TAKEN OPPOSITE THE INTERIOR ANGLES OF THE FENDER AS SHOWN. POSITIONS 184 AND 194 WERE TAKEN AT THE NORTH EAST CORNER OF THE NAVIGATIONAL STRUCTURE AND OPPOSITE A LARGE CYLINDRICAL BOLLARD ON THE SOUTH SIDE OF THE FENDER RESPECTIVELY.

19 of 61

Point	Interior Angle	Angle of leg w/rt coord axis	Sine	Cosine	Length of leg	E Coordinates +	E Coordinates −	N Coordinates +	N Coordinates −	Coordinates + E	Coordinates − N
A											
G	133°24									100.00	0.00
		0°00	0.000	1.000	166.20	166.27 ~~166.20~~	+0.07	~~0.00~~	−0.07	~~100.00~~	~~0.00~~
E	133°41									266.27	−0.07
		46°19	0.72317	0.69067	91.40	63.17 ~~63.13~~	+0.04	66.07 ~~66.10~~	−0.03	~~266.20~~	~~0.00~~
D	92°14									329.44	66.00
		134°05	0.71833	0.69570	96.60	+0.04	67.16 ~~67.16~~ 20	69.35 ~~69.39~~	−0.04	~~329.33~~	~~66.10~~
C	133°38									262.28	135.35
		180°27	0.00785	0.99997	163.50	+0.07	163.43 ~~163.50~~	−0.06	1.34 ~~1.28~~	~~262.13~~	~~135.49~~
B	133°11									98.85	134.01
		227°16	0.73452	0.67859	91.35	+0.03	61.96 ~~61.99~~	−0.03	67.13 ~~67.10~~	~~98.63~~	~~134.21~~
A	93°56									36.89	66.88
		313°20	0.72737	0.68624	91.90	63.11 ~~63.07~~	+0.04	−0.03	66.88 ~~66.85~~	~~36.64~~	~~67.11~~
G										100.00	0.00
										~~99.71~~	~~0.26~~
Totals	720°04				700.95	292.40	292.69	135.49	135.23	+0.29	−0.26
				Adjustments		+0.29			−0.26		

TRAVERSE ADJUSTMENT SOUTH PIER GOLDEN GATE BRIDGE
USE G _ E AS X AXIS WITH POINT G HAVING COORDINATES OF +100.+0.00



FE 4 (1964)
Vicinity Piers at Golden Gate Bridge

Comparison between FE 1 (1956) and the present survey in the vicinity of the North Pier reveals a deepening of 3 to 4 ft west of the pier, little change from southwest of the pier to south of the center and a deepening of 2 ft. south of the east half of the pier. However, south of the pier in depths of about 40 ft. a deepening of 3-4 ft has occurred.

A comparison between H-7717 (1948) scale 1:2400 and the present survey reveals a deepening of 2-5 ft. in most areas around the South Pier. Scouring of 10 ft. is indicated next to the pier in several places. Prior depths of 103 to 110 ft. found in a slight deep 50 ft. off the northeast face of the pier have shoaled to about 93 ft. About 35 ft. beyond the prior deep, scouring of 10 ft. has occurred in prior depths of 93 to 104 ft.

Review considered completed,
R H Carstens

R. H. Carstens
11/20/64

FORM C&GS-413
(12-8-61)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

REFERENCE NO.
PI - 64 - 93

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY *(Check)*:

☐ ORDINARY MAIL ☐ AIR MAIL

☐ REGISTERED MAIL ☐ EXPRESS

☐ GBL *(Give number)* _____

TO:

Golden Gate Bridge and Highway District
Box 9000
Presidio Station
San Francisco, Calif.

DATE FORWARDED
29 October 1964

NUMBER OF PACKAGES
1 package (number 38)

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

1. Current Reference Book
1. Tide Book
1. Sounding Volume
3. Fathograms
1. Boat Sheet for North Pier
3. South Pier Work Sheets
1. Descriptive Report
1. Smooth Sheet North Pier Survey
1. Photo Tracing " " "
1. Smooth Sheet South " "
1. Photo Tracing " " "

All records forward to:

FROM: *(Signature)*

E. B. Brown, Commanding Officer, USC&GS PIONEER

Return receipted copy to:

Commanding Officer
USC&GS PIONEER
121 CUSTOMHOUSE
San Francisco, Calif. 94111

RECEIVED THE ABOVE
(Name, Division, Date)

ARTHUR C. JENKINS
ENGINEER
GOLDEN GATE BRIDGE
AND HIGHWAY DISTRICT
OCT 29 1964

USCOMM-DC 8609-P63

FORM C&GS-413
(12-8-61)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

REFERENCE NO.

PI - 64 - 94

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY *(Check)*:

☑ ORDINARY MAIL ☐ AIR MAIL

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☐ GBL *(Give number)* _____

TO:

The Director
US Department of Commerce
Coast and Geodetic Survey
Washington Science Center
Rockville, Maryland 20852

DATE FORWARDED

3 November 1964

NUMBER OF PACKAGES

One package (#39)

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

One copy of Survey of Golden Gate Bridge Pier Vicinity done for Golden Gate Bridge Authority.

FROM: *(Signature)*

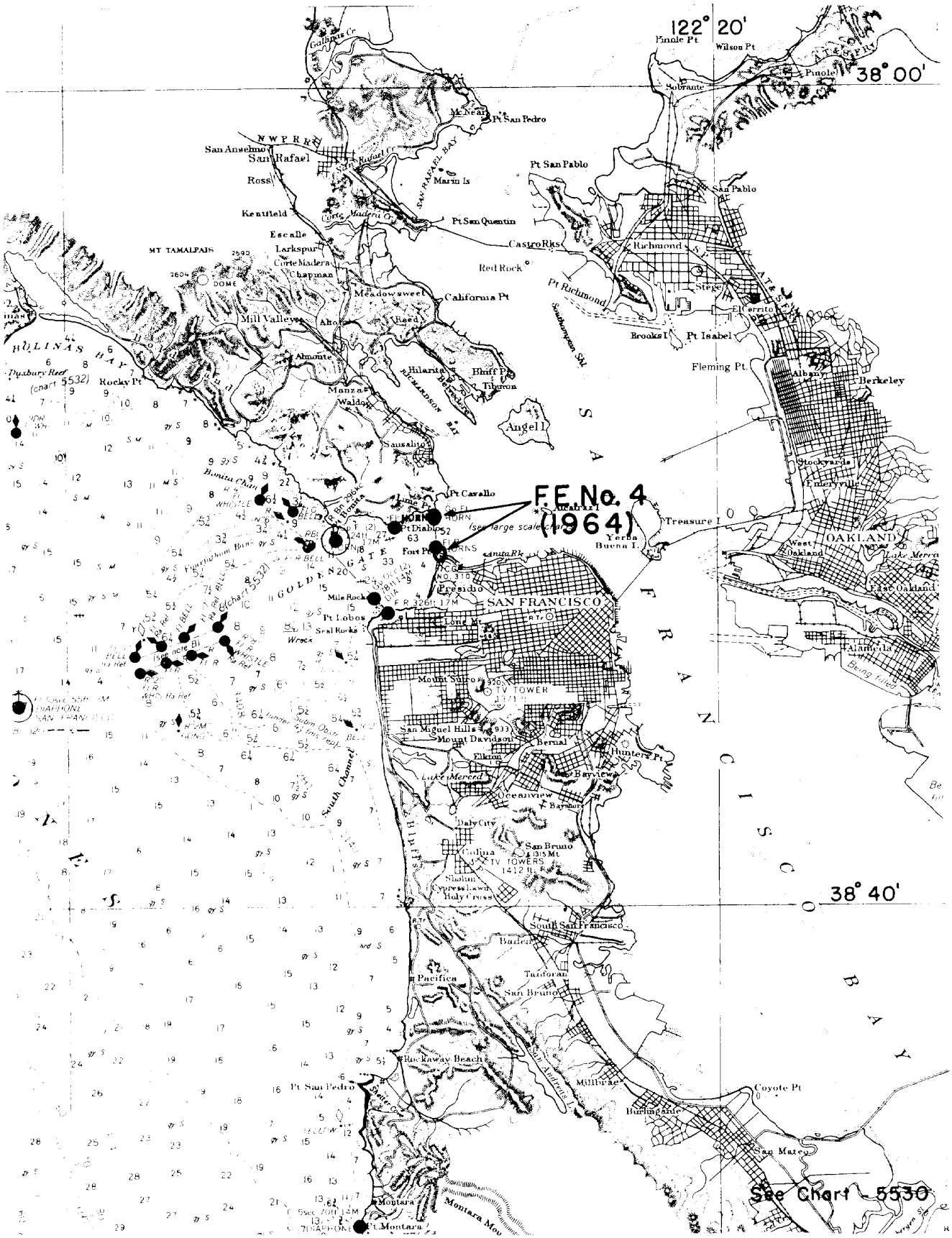
E. B. Brown, Commanding Officer, USC&GSS PIONEER

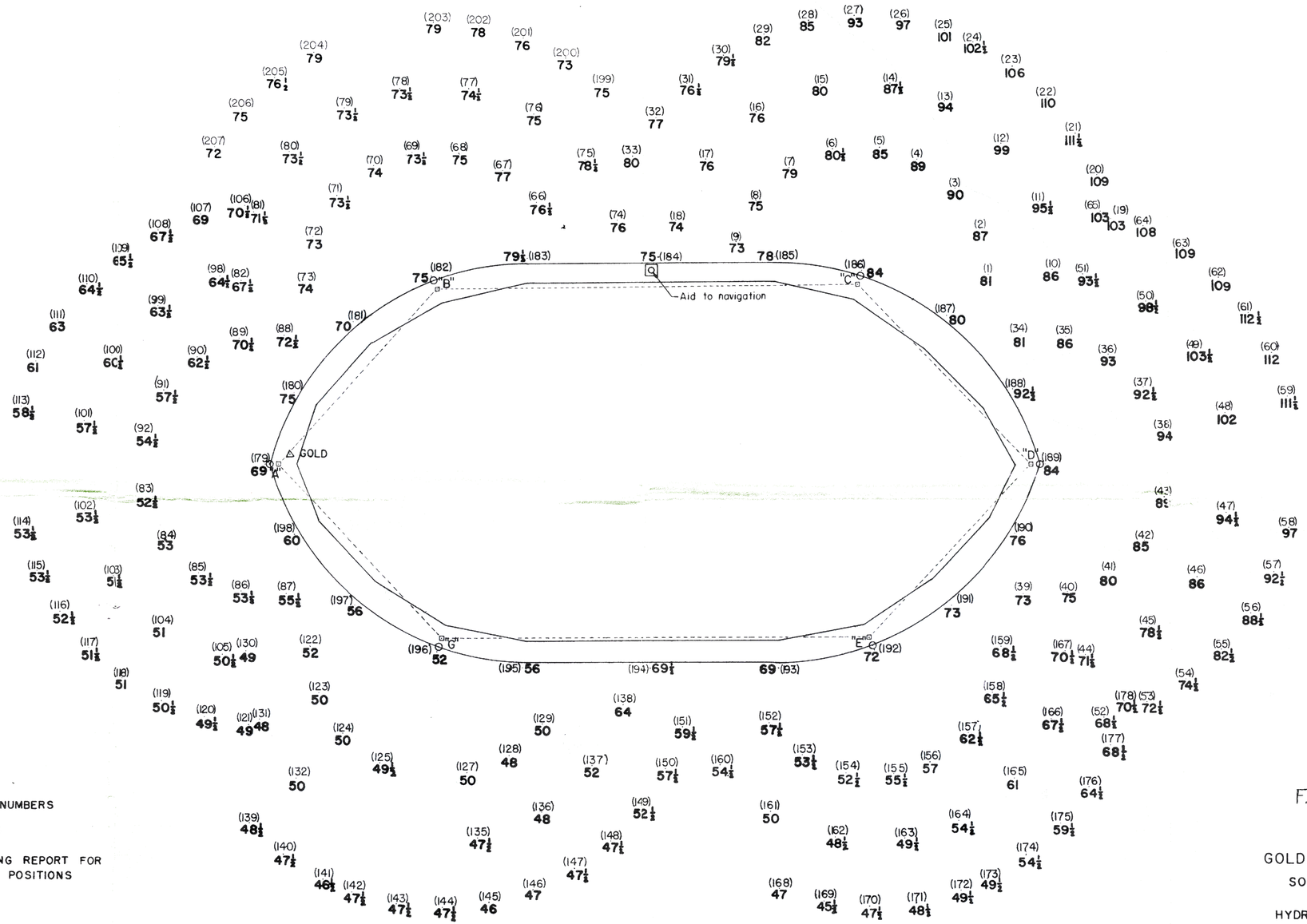
RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Commanding Officer
USC&GSS PIONEER
121 Customhouse
San Francisco, Calif. 94111

USCOMM-DC 8609-P63


122° 20'
38° 00'
38° 40'
F.E. No. 4
(1964)
(see large scale chart)
See Chart 5530
Pinole Pt
Wilson Pt
Pinole
Selbrante
Pt San Pedro
San Anselmo
San Rafael
Ross
Kentfield
Escalle
Larkspur
Corte Madera
Chapman
MT TAMALPAIS
Marin Is
Pt San Quentin
Pt San Pablo
San Pablo
Richmond
Castro Rks
Red Rock
Pt Richmond
Brooks I
Pt Isabel
Meadowsweet
California Pt
Mill Valley
Almonte
Reed
Hilarita
Bluff Pt
Tiburon
Belvedere
Manzanita
Waldo
Sausalito
Angel I
Rocky Pt
Bolinas Bay
Duxbury Reef
(chart 5532)
Pt Cavallo
Pt Diablo
Fort Point
Presidio
SAN FRANCISCO
Mile Rock
Pt Lobos
Seal Rocks
Golden Gate
Fleming Pt
Albany
Berkeley
Stockyards
Emeryville
Treasure I
Yerba Buena I.
OAKLAND
West Oakland
East Oakland
Alameda
Mount Sutro
TV TOWER
San Miguel Hills
Mount Davidson
Bernal
Hunters Pt
Lake Merced
Oceanview
Bayview
Daly City
Colma
San Bruno
TV TOWERS
Cypress Lawn
Holy Cross
South San Francisco
Baden
Pacifica
Tanforan
San Bruno
Rockaway Beach
Pt San Pedro
Millbrae
Burlingame
Coyote Pt
San Mateo
Montara
Montara Mou
South Channel
San Andreas
SAN FRANCISCO BAY



EXPLANATION:

(95) — POSITION NUMBERS

67½ — SOUNDINGS

SEE ACCOMPANYING REPORT FOR DATA REGARDING POSITIONS

SCALE: 1" = 25'

BLACK DOT BETWEEN POSITION NUMEER AND DEPTH SOUNDING IS ACTUAL PLACE SOUNDING WAS MADE

F.E. 4 (1964)

GOLDEN GATE BRIDGE

SOUTH PIER FENDER

HYDROGRAPHIC SURVEY

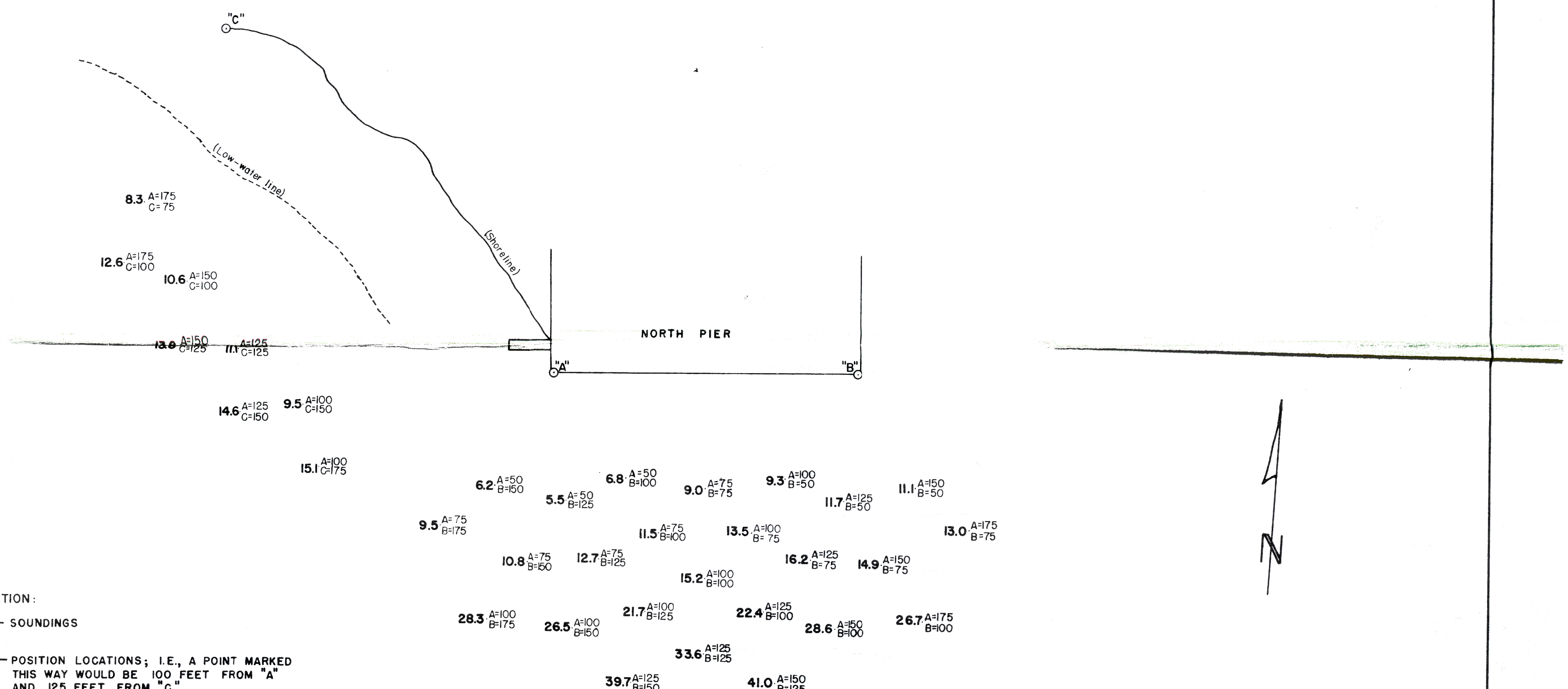
UNITED STATES COAST AND GEODETIC SURVEY
H. ARNOLD KARO, DIRECTOR

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

12 OCTOBER 1964

POSITIONS PLOTTED BY: F.G.P.
POSITIONS VERIFIED BY: [illegible]
SOUNDINGS VERIFIED BY: [illegible]

Chart 5532
5535 [illegible]
1650 [illegible]
Sheet 6



EXPLANATION:

23.1 — SOUNDINGS

A=100
C=125 — POSITION LOCATIONS; I.E., A POINT MARKED THIS WAY WOULD BE 100 FEET FROM "A" AND 125 FEET FROM "C."

SCALE: 1" = 25'

BLACK DOT BETWEEN POSITION NUMBER AND DEPTH SOUNDING IS ACTUAL PLACE SOUNDING WAS MADE

GOLDEN GATE BRIDGE

NORTH (MARIN) PIER

HYDROGRAPHIC SURVEY

UNITED STATES COAST AND GEODETIC SURVEY
H. ARNOLD KARO, DIRECTOR

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

Charts 5532
5535 ✓
165 sc Inset 6

12 OCTOBER 1964 POSITIONS PLOTTED BY: F.G.P.
" VERIFIED BY: PWL
SOUNDINGS " BY: PWL

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. F.E.No.4, 1964

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
5532	2-24-65	A.J. Lunday	Full [redacted] After Verification Review Inspection Signed Via
			Drawing No. thru 5535, no critical corr.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975

USCOMM-DC 8558-P63